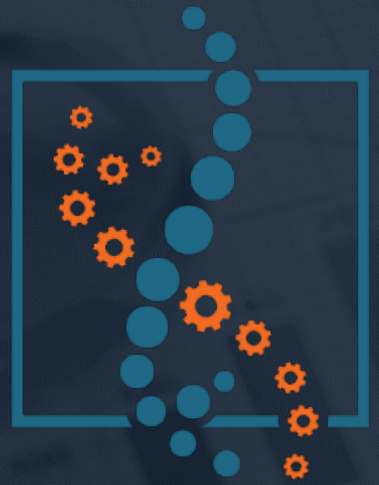

INTELLEGO

TECHNOLOGIES

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Intellego Technologies Background

- Founded in 2011
- R&D company based in Sweden
- Focus on development of patent protected dosimeter technology
- Active in consumer, healthcare and construction industry
- Just set up US office:
  - Contact person is
    - Leigh Veasey
    - leigh@intellego-technologies.com
    - 404 955 4345

Increasing intserest is having a visual indication of UV exposure

”How do I know that it works?”

Ultraviolet-C (UV-C) monitoring made ridiculously simple: UV-C dose indicators for convenient measurement of UV-C dosing

Jennifer L. Cadnum, BS[1]; Annette L. Jencson, CIC[2]; Sarah Redmond, MD[3]; Thriveen Sankar Chittoor Mana, MS[3] & Curtis J. Donskey, MD[1-3]

1. Research Service, Louis Stokes Cleveland Veterans Affairs Medical Center, Cleveland OH,
2. The Cleveland VA Medical Research and Education Foundation, Cleveland, OH
3. Department of Medicine, Division of Infectious Diseases, Case Western Reserve University, Cleveland, OH

Contact: Jennifer.Cadnum@VA.gov

U.S. Department of Veterans Affairs, Northeast Ohio VA Healthcare System

Case Western Reserve University EST. 1826 think beyond the possible

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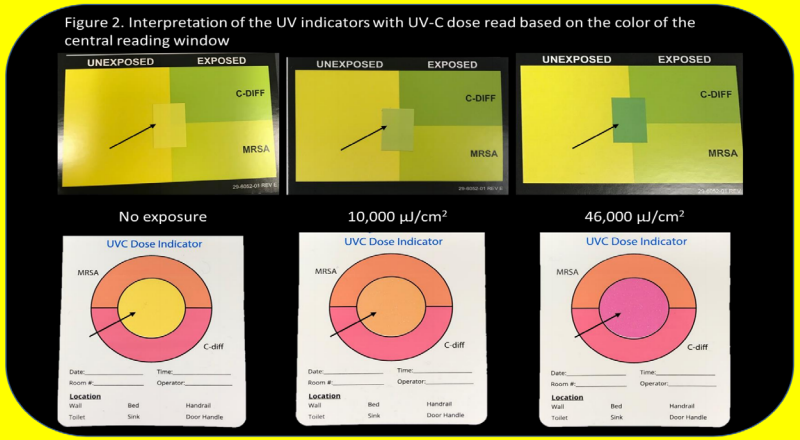
Poster #1215

Background

- Ultraviolet-C (UV-C) light is increasingly used as an adjunct to standard cleaning in healthcare facilities
- Most facilities do not have a means to measure UV-C to determine if effective doses are being delivered
- We tested the efficacy of 2 easy-to-use colorimetric indicators for monitoring UV-C dosing in comparison to log reductions in pathogens

Figure 2. Interpretation of the UV indicators with UV-C dose read based on the color of the central reading window

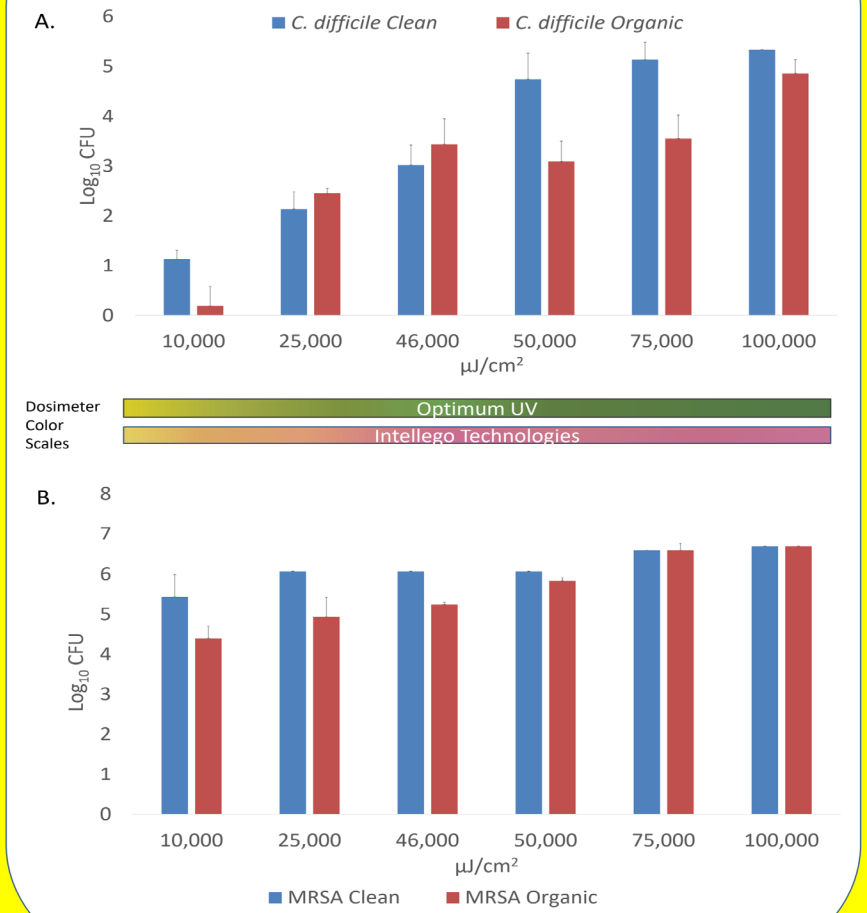


Methods

- In a laboratory setting, we exposed methicillin-resistant Staphylococcus aureus (MRSA) and *Clostridioides difficile* spores on steel disk carriers to UV-C for varying fluence exposures ranging from 10,000 to 100,000 µJ/cm2
- The UV-C indicators were placed adjacent to the carriers
- Change in color of the indicators was correlated with dose and $\log_{10}$ CFU reductions

Results

Figure 1: Reduction of *C. difficile (A) and MRSA (B)* with varying fluence exposures



Results

- The UV-C doses required to achieve a 3-log reduction in MRSA and C. difficile were 10,000 and 46,000 µJ/cm², respectively
- For both indicators, there was a visible color change from baseline at 10,000 µJ/cm2 and a definite final color change by 46,000 µJ/cm2 (Figure 1&2)
- Organic load had only a modest impact on UV-C efficacy
- The indicators required only a few seconds to place and were easy to read (Figure 2)

Conclusions

- UV-C doses of 10,000 µJ/cm² and 46,000 µJ/cm² were required to achieve 3 log reductions of MRSA and *C. difficile* spores, respectively.
- The colorimetric indicators provide an easy means to monitor UV-C dosing.
- Additional studies are needed to evaluate use of the indicators in patient rooms including in shaded areas

Acknowledgement

- We thank The Clorox Company and Intellego Technologies for providing devices for testing
- Providing companies did not have any role in planning or design of the study and no funding was received

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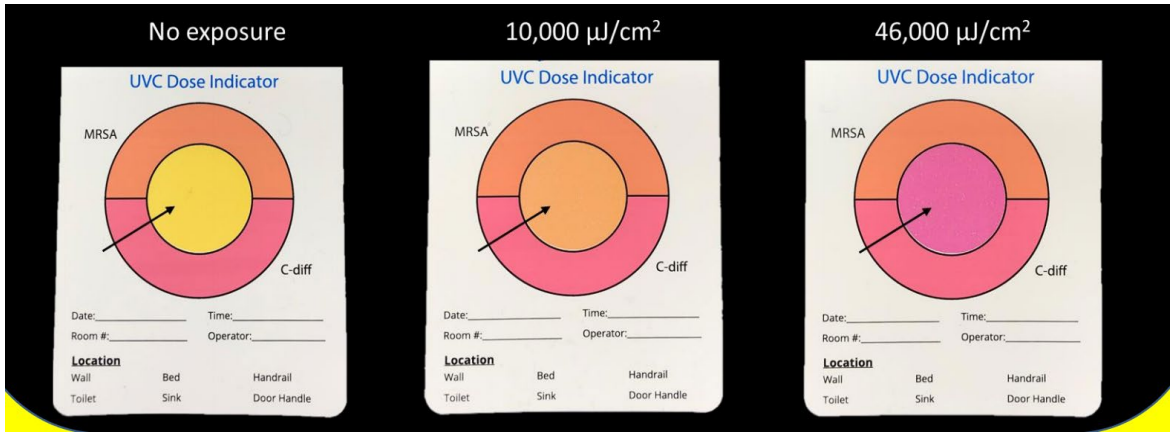

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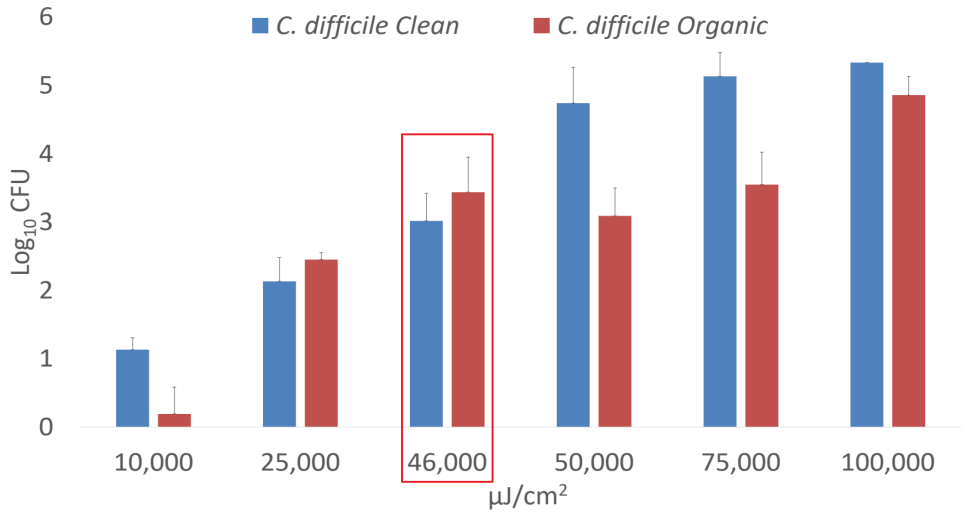

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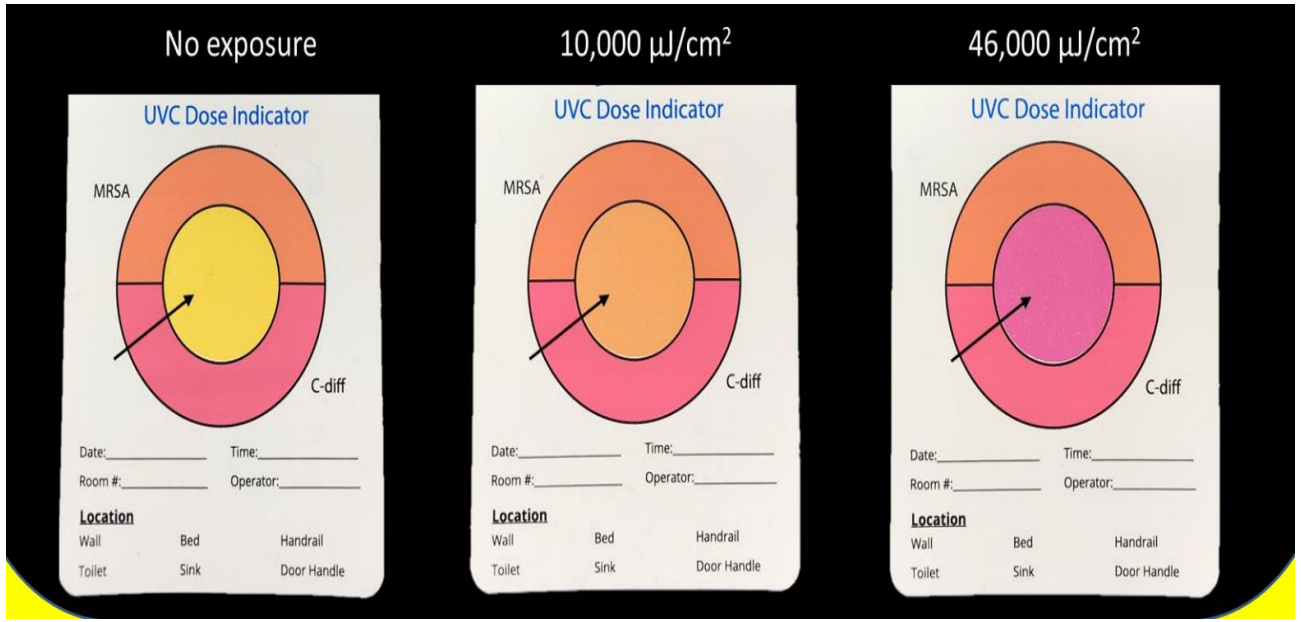

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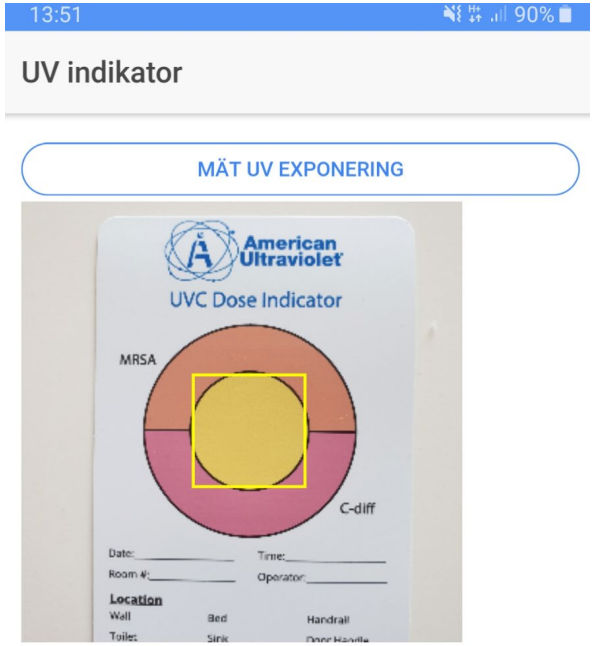
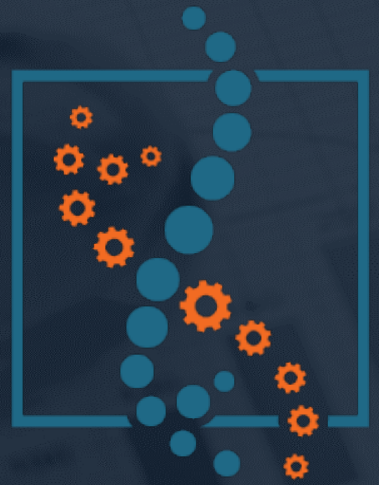
For tomorrow….

- Dosimeter development
- Additional studies
- What does the hospitals think of the dosimeters?
  - App system to photograph, read and store dosimeter results
    - Possible to go back 12 months in time and review the colour change of a specific dosimeter



2

dist (medel): 44.53696448887559
dist (histo): 45



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